## Claim Amendments:

## Please amend claims as follows:

- 1. (Currently Amended) A method for reducing volume resistivity of a body consisting essentially of aluminum nitride, comprising exposing the body to a temperature of at least about 1000°C in an atmosphere deficient in nitrogen, wherein a partial pressure of nitrogen in said atmosphere is less than about 35 kPa, and wherein the body has a relative density greater than about 98% of theoretical density.
- 2. (Original) The method of Claim 1, wherein said body is polycrystalline.
- 3. Cancelled.
- 4. (Original) The method of Claim 3, wherein said atmosphere consists essentially of a gas selected from the group consisting of argon, helium, and mixtures thereof.
- 5. (Original) The method of Claim 4, wherein said atmosphere consists essentially of argon.
- 6. (Original) The method of Claim 5, wherein the body is exposed to a temperature of at least about 1200°C.
- 7. (Original) The method of Claim 6, wherein the body is exposed to a temperature of at least about 1500°C.
- 8. (Original) The method of claim 7, wherein the body is exposed to a temperature of at least about 1650°C.
- 9. (Original) The method of Claim 4, wherein the body is exposed to said temperature for a period of at least about 0.5 hours after the body has reached thermal equilibrium.
- 10. (Original) The method of Claim 9, wherein the body is exposed to said temperature for a period of at least about four hours after the body has reached thermal equilibrium.



- 11. (Original) The method of Claim 8, further including steps of cooling the body at a rate of less than about 15°C per minute to a temperature of less than about 1200°C.
- 12. (Original) The method of Claim 11, wherein the body is cooled to a temperature of about 1500°C.
- 13. (Original) The method of Claim 1, wherein the atmosphere is at a pressure of at least about 1 Pa.
- 14. (Original) The method of Claim 1, wherein the atmosphere is at a pressure of between about 7 kPa and about 14 kPa.
- 15. (Original) The method of Claim 4, wherein the polycrystalline body is exposed to said atmosphere at a temperature of at least about 1650°C for a period of at least about four hours, and wherein the atmosphere is at a pressure of about 20 MPa.
- 16. (Original) The method of Claim 15, further including the step of cooling the polycrystalline body to a temperature of about 1500°C at a rate of about 15°C per minute.
- 17. (Cancelled)
- 18. (Original) The method of Claim 1, wherein said body is a green body.
- 19. (Original) The method of Claim 18, wherein the green body includes aluminum nitride particles having an average particle size in a range of between about 0.1 μm and about 5.0 μm.
- 20. (Original) The method of Claim 19, further including the step of sintering said green body.
- 21. (Original) The method of Claim 20 wherein said green body is sintered at a temperature of at least about 1600°C.
- 22. (Original)The method of Claim 21, wherein said green body is sintered in an atmosphere deficient in nitrogen.
- 23. (Original) The method of Claim 22, wherein said atmosphere consists essentially of argon.



- 24. (Original) The method of Claim 23, wherein said green body causes said body to become polycrystalline.
- 25. (Original) The method of Claim 24, further including the step of cooling said polycrystalline body to about 25°C prior to exposing the body to a temperature of at least about 1000°C in an atmosphere deficient in nitrogen.
- 26. (Original) The method of Claim 25, wherein the polycrystalline body is exposed to a temperature of at least about 1600°C for a period of at least about four hours.
- 27. (Original) The method of Claim 26, further including the step of cooling the polycrystalline body to a temperature less than about 1500°C at a rate less than about 15°C per minute.
- 28. (Cancelled)
- 29. (Original) The method of Claim 20, wherein the green body is sintered at a pressure in a range of between about 10 MPa and about 50 MPa.
- 30. (Original) The method of Claim 20, wherein the green body is sintered at a pressure of at least about 10MPa.
- 31. (Original) The method of Claim 30, wherein the green body is sintered at a pressure of about 20 MPa.
- 32. (Original) The method of Claim 1, wherein the body is exposed to said temperature in excess of about 1000°C for a period of time sufficient to cause the volume resistivity to be in a range of between about 1x10<sup>8</sup> ohm.cm and 1x10<sup>13</sup> ohm.cm at a temperature of about 23°C.
- 33. (Original) The method of Claim 1 wherein the body is formed from an AIN powder and said powder is exposed to a temperature of at least about 1000°C in an atmosphere deficient in nitrogen.



- 34. (Currently Amended) A method for forming a polycrystalline aluminum nitride body having a volume resistivity less than about 1x10<sup>13</sup> ohm.cm at a temperature of about 23°C, comprising the steps of:
  - a) sintering a green body consisting essentially of aluminum nitride to form a polycrystalline body and;
  - b) exposing said polycrystalline body to soak temperature of at least about 1000°C in an atmosphere deficient in nitrogen for a period of time sufficient to cause the volume resistivity of the polycrystalline body to be less than about 1x10<sup>13</sup> ohm.cm at a temperature of about 23°C, wherein a partial pressure of nitrogen in said atmosphere is less than about 35 kPa, and wherein the polycrystalline body has a relative density greater than about 98% of the theoretical density.
- 35. (Original) The method of Claim 34 wherein the atmosphere deficient in nitrogen consists essentially of argon.
- 36. (Original) The method of Claim 35, wherein the green body includes aluminum nitride and powder having an average particle size in a range of between about 0.1μm and about 5.0μm.
- 37. (Original) The method of Claim 36, wherein the polycrystalline body is cooled from a sintering temperature to at a rate less than about 15°C per minute.
- 38. (Original) The method of Claim 37, wherein the green body is sintered in a nitrogendeficient atmosphere.
- 39. *(Original)* The method of Claim 38, wherein the green body is sintered in an atmosphere consisting essentially argon.
- 40. (Original) The method of Claim 39, wherein the green body is sintered at a pressure in a range of between about 10 MPa and about 50 MPa.
- 41. (Original) The method of Claim 39, wherein the green body is sintered at a pressure of at least about 10 MPa.



- 42. (Original) The method of Claim 34 wherein the body is formed from an AIN powder exposed to a soak temperature of at least about 1000°C in an atmosphere deficient in nitrogen.
- 43. (Currently Amended) A method of reducing the volume resistivity of an electrostatic chuck consisting essentially of aluminum nitride, comprising exposing at least a portion of the electrostatic chuck to a temperature of at least about 1000°C in an atmosphere deficient in nitrogen, wherein a partial pressure of nitrogen in said atmosphere is less than about 35 kPa, and wherein the chuck has a relative density greater than about 98% of theoretical density.
- 44. (Original) The method of Claim 43, wherein the atmosphere consists essentially of argon.
- 45. (Original) The method of Claim 43, wherein the electrostatic chuck is exposed to said temperature in excess of 1000°C for a period of time sufficient to cause the volume resistivity of the chuck to be in a range of between about 1x10<sup>8</sup> ohm.cm and about 1x10<sup>13</sup> ohm.cm at a temperature of about 23°C.
- 46. (Cancelled)
- 47. (Previously Added) The method of claim 1, wherein said body does not contain sintering aids.
- 48. (*Previously Added*) The method of claim 34, wherein said green body is formed without the addition of sintering aids.
- 49. (Previously Added) The method of claim 43, wherein said electrostatic chuck does not contain sintering aids.



- 50. (Currently Amended) A method for forming a polycrystalline aluminum nitride electrostatic chuck, comprising the steps of:
  - forming a green body consisting essentially of aluminum nitride powder without addition of sintering aids;
  - sintering the green body to form a polycrystalline body, wherein sintering is carried out at a pressure of at least about 10MPa; and
  - exposing the polycrystalline body to a temperature of at least 1000°C in an atmosphere deficient in nitrogen, wherein a partial pressure of nitrogen in said atmosphere is less than about 35 kPa, and wherein the polycrystalline body has a relative density greater than about 98% of theoretical density.

